

## Editorial

# Dysphagia: An Overview

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It has been exactly 25 years since we started working on the treatment of patients with dysphagia. I cannot forget to emphasize and thank two great teachers that I had at the beginning of my journey in the field of dysphagia in 1999, professors Ricardo Carrau, MD (Ohio State University) and Thomas Murry, Ph.D. (Loma Linda University), at the time, head of the Center for Swallowing Disorders, Department of Otorhinolaryngology, Pittsburgh University/Eye & Ear Institute, where I went to do my post-doctoral fellowship. There, the Chairman was Eugene N. Myers, MD, FACS, FRCS Edin (Hon). At that time, it was a watershed in the diagnostic and therapeutic understanding of how to approach patients with dysphagia, who were treated under such different medical specialties, and until then, the field of otorhinolaryngology had not yet worked with great dedication in this area on the global scale. Congratulations to these two brilliant professors for their continued incentive and encouragement for the development of this area of our specialty. It is highlighted in the medical literature that between 16% and 22% of the population over 50 years of age have had some type of dysphagic event and that between 14% and 94% of post-stroke patients and between 50% and 95% of patients with Parkinson's disease also have some degree of dysphagia. It is known that this is a disease with high morbidity and mortality rates, in addition to the high cost of life maintenance. With advancing age, the chances of aspiration pneumonia increase in patients with dysphagia. It is estimated that one-third of patients with dysphagia will develop aspiration pneumonia.<sup>1,2</sup> Knowledge of anatomy and neuroanatomy, physiology, and pathology allows us to understand how swallowing disorders and their complications evolve, and this knowledge is important while developing therapeutic proposals, especially in the case of patients with degenerative diseases. Understanding how the cranial nerves participate in the swallowing mechanism (V, VII, IX, X, and XII cranial nerves) facilitates the diagnosis and the establish-

ment of a focused therapy. Swallowing begins at the 12<sup>th</sup> week of intrauterine life, with a full-term fetus swallowing up to 500 mL of amniotic fluid per day. Children who are born prematurely present with immaturity of the suction–swallowing coordination and often need to be fed with an orogastric tube. The normal adult swallows on average 600 times a day, with 35 swallowing movements per hour while awake and 6 swallowing movements per hour while asleep; these movements facilitate the movement of the 1200 to 1500 mL of saliva produced in 24 hours under normal conditions from the mouth to the stomach.<sup>2</sup> The patient's history and physical examination elucidate approximately 80% of the cases of patients with dysphagia.<sup>3</sup> Among the differential diagnoses, highlight neoplastic (benign and malignant), neurogenic, metabolic, infectious, iatrogenic, anatomical, autoimmune, and psychiatric diseases are highlighted. There are several objective methods of investigation of the dysphagic patient, and videoendoscopy of swallowing using colored food of various consistencies and videofluoroscopy performed with an image intensifier (in a Radiology Department) are considered the gold standard in the diagnosis of patients with dysphagia, complementing each other in some aspects and overlapping in many others.<sup>2,4–8</sup> At our Dysphagia Clinic, we perform videoendoscopy of swallowing in 100% of the cases, and only perform videofluoroscopy in cases of infantile dysphagia, in cases where there is difficulty in evaluating the videoendoscopic exam, and especially in cases of suspected silent aspiration, where the patient has no cough or choking reflex when the fiberoptic laryngoscope is maneuvered into the subglottic and tracheal region. In these cases, videofluoroscopy is indicated to clarify swallowing videoendoscopy findings.

It should be noted that videofluoroscopy is an excellent modality for the evaluation of patients with dysphagia, however, it has the disadvantages of excess radiation

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exposure for the patient and the requirement for barium contrast ingestion. Other tests, such as 24-hour triple-channel esophageal phmetry, esophageal manometry, esophagoscopy, FEESST (Flexible Endoscopic Evaluation of Swallowing with Sensory Testing), transesophageal ultrasound, scintigraphy, electromyography, and PET-Scan, may also be necessary.

The therapeutic modalities for patients with dysphagia are diverse and may be resolute or not, i.e., they can be either temporary or permanent. These modalities can be divided into noninvasive and invasive treatments. Clinical drug treatment, nutritional approaches, and speech therapy are the noninvasive modalities used, and the speech therapist is always present in the joint diagnosis and treatment of patients with dysphagia. The participation of the speech therapist together with the otorhinolaryngologist from the first evaluation of the dysphagic patient until the therapeutic outcome is a fundamental requirement. The team of professionals, besides the otolaryngologist and the speech therapist, can and should include other specialists, such as a nutritionist, gastroenterologist, pulmonologist, neurologist, psychiatrist, nurse, and occupational therapist. Invasive treatments include esophageal dilation (four to eight sessions on average) using Savary-Gilliard candles, temporary or definitive tracheostomy with laryngeal burying, gastrostomy, cricopharyngeal myotomy, Type I Thyroplasty, injection of botulinum toxin into the salivary glands and cricopharyngeal muscles, temporomandibular joint correction surgery, esophageal surgery, among other procedures. The clinical treatment may be related to xerostomia, sialorrhea, gastroesophageal reflux, and pseudodysphagia (globus hystericus). As for nutritional therapy, the condition of the dental arch, types of cutlery used for meals (sizes and amounts of food), chewing pattern, time of execution of the oral phase, and cleaning the oral cavity before and after meals are important aspects. Speech therapy rehabilitation, in turn, seeks to rehabilitate patients with dysphagia through postural maneuvers of the head, oral sensory motor stimulation, training of oral control, cold thermal stimulation, multiple swallowing, stress swallowing, use of a speech valve, appropriation of bottle nipple models for children, changes in the consistency and volume of the bolus, etc.<sup>2,9</sup>

Santoro<sup>10</sup> reported 15 years ago that the number of dysphagic individuals was increasing as a result of the population's increased life expectancy and the clinical conditions that correspond with swallowing disorders.

We know that diseases can oftentimes prove insurmountable, especially demyelinating diseases and cancer. However, we cannot lose hope or the perception that the quality of life, or rather, the survival of the patient with an incurable disease that progresses with dysphagia is dependent on the professional sensitivity of the treating physician in planning the patient's caloric and protein support through an endoscopic gastrostomy, for example, without losing sight of the fact that the simple act of stimulating the taste buds with something that can be ingested, even minimally, keeps the patient alive, and mainly, socialized

We believe that the use of a nasogastric tube in a patient with dysphagic at risk of pulmonary aspiration is unfavorable, just like not giving the patient any other course of action, or even different perspectives to the patient, and act as if their problem is solved. We think about the patient's quality of life, and how to make the best it possibly can be. It is noteworthy that saliva continues to be a problem with any type of tube that is used for caloric and protein support of the patient. In these cases, our best experience has been with the use of botulinum toxin in the parotid and submandibular glands in order to decrease saliva production and minimize the risks of aspiration.

Our patients, while vigilant and responsive, "experience the tastes of life" until their last days, always avoiding pulmonary aspiration, and testing various food consistencies.

"When treating a disease, you can win or lose. When treating a person, you always win." (Hunter Doherty).

**Conflict of Interest**  
None.

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